

Medical Informatics at USMEPCOM

A platform for prospective
longitudinal medical
accession research studies

A-Z Team

- Late 02-early 03
- USMEPCOM customers (recruiting, accession) + USMEPCOM personnel
- Examined all MEPS business practices including aptitude testing, operations, medical
- Medical informatics proposal outgrowth of the team's effort

Medical Informatics Proposal

- To build a computerized MEPS medical knowledge base and MEPS electronic medical record
- To provide dedicated medical informatics personnel at USMEPCOM for customer support and knowledge base maintenance

The Proposed Medical Knowledge Base

- Would be resident on the desktop of every MEPS physician
- Would be organized around diseases and disorders
- Would contain MEPS specific information on qualification rules, diagnostic workup, and other information
- Would link directly to items on the currently used medical history and physical examination forms

The Proposed MEPS Electronic Medical Record

- Would become the first entry into the service member's CHCS II medical record
- Would contain copies of an applicant's civilian medical records (e.g., surgical records, pathology reports, etc.)
- Would use medical terminology far richer than ICD-9 codes

Medical Informatics at USMEPCOM

- Would be a contact point for all of USMEPCOM's customers, including accession research agencies
- Would maintain the knowledge base
- Would help accession research agencies apply longitudinal research studies using the medical informatics software

Schematic View of USMEPCOM Medical Informatics

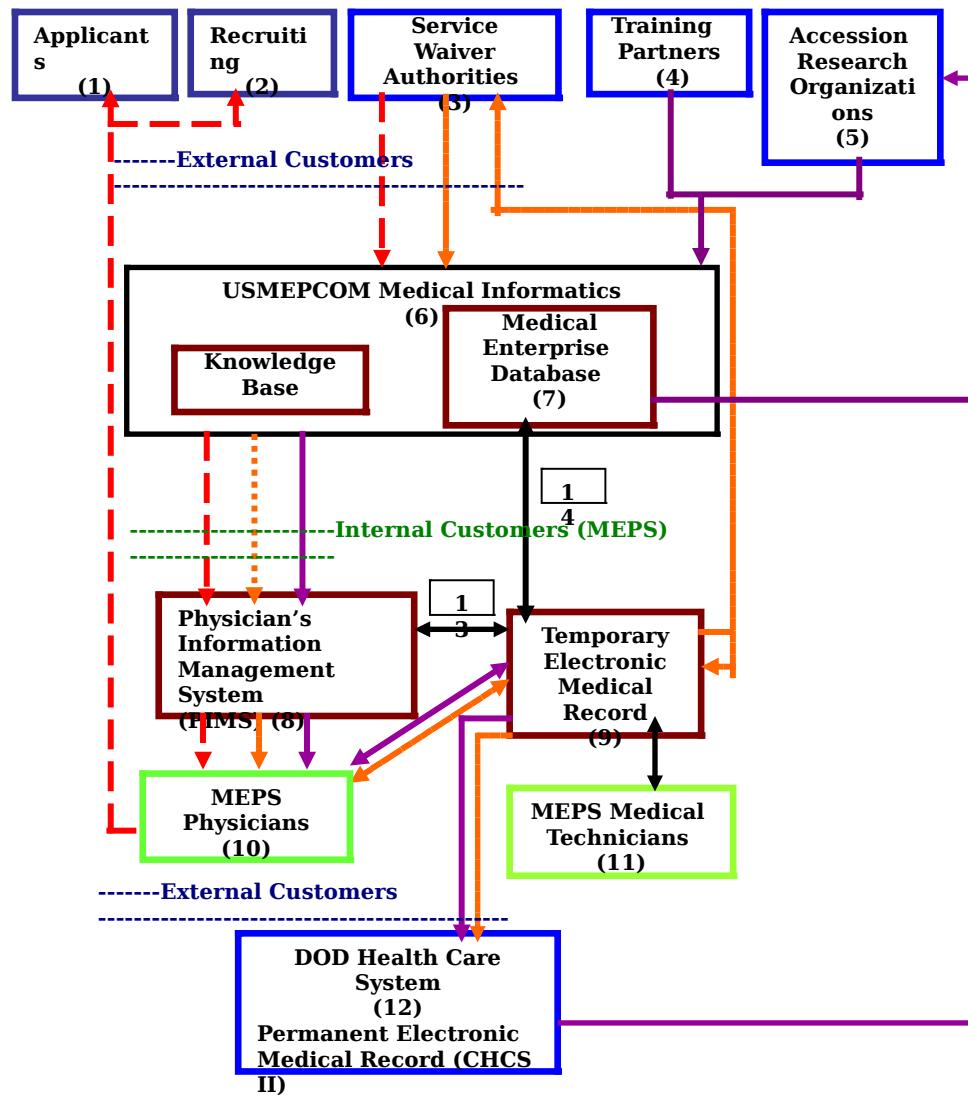


Figure 1 Medical Informatics at USMEPCOM: A
Proposal v1-28-03(1700)

To Build the Software

- Detailed input from USMEPCOM's customers, including accession research, is needed for the design of the software

An Asthma Example

- Study question: Does a lung test predict attrition in recruits with a history of childhood asthma, but no asthma after age 13,?
- Step 1. Applicant checks yes to the question “Have you ever had or do you now have asthma or any breathing problems related to exercise, weather, pollens, etc”?

REPORT OF MEDICAL HISTORY

(This information is for official and medically confidential use only and will not be released to unauthorized persons.)

Form Approved
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PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 504, 505, 507, 532, 978, 1201, 1202, and 4346; and E.O. 9397.

PRINCIPAL PURPOSE(S): To obtain medical data for determination of medical fitness for enlistment, induction, appointment and retection for applicants and members of the Armed Forces. The information will also be used for medical boards and separation of Service members from the Armed Forces.

ROUTINE USE(S): None.

DISCLOSURE: Voluntary; however, failure by an applicant to provide the information may result in delay or possible rejection of the individual's application to enter the Armed Forces. For an Armed Forces member, failure to provide the information may result in the individual being placed in a non-deployable status.

WARNING: The information you have given constitutes an official statement. Federal law provides severe penalties (up to 5 years confinement or a \$10,000 fine or both), to anyone making a false statement. If you are selected for enlistment, commission, or entrance into a commissioning program based on a false statement, you can be tried by military courts-martial or meet an administrative board for discharge and could receive a less than honorable discharge that would affect your future.

An Asthma Example, continued

- The system then asks the MEPS physician to obtain answers to questions like the following:
 1. “Were you told by a doctor that you have asthma”?
 2. “Have you had an attack since age 13”?
 3. “Have you used an inhaler since age 13”?
 4. “Have you played on high school athletic teams since age 13, without any breathing problems or inhaler use”?

An Asthma Example, continued

- Assuming the answers to questions 1-3 is no and 4 is yes, the system determines that the applicant is eligible for the study
- The system then does the following:
 - Consults a random number generator and randomizes the applicant to either a control or experimental group
 - Orders a lung test for the members of the experimental group

An Asthma Example, continued

- Flags the applicant's record so that it cannot be closed out until the results of the lung test have been entered
- Records pertinent data (applicant's age, sex, ethnicity, etc.) in a database
- Enters the MEPS electronic medical record into CHCS II

An Asthma Example, continued

- The experimenter now has a control and experimental group that can be followed over time by accessing their CHCS II medical records
- If the information about the service members job can also be accessed, it should be possible to job-specific longitudinal accession research studies

What is needed now

- A USMEPCOM PAT team is to be formed to develop a technical requirements document for medical informatics
- Representation by members of the accession research communities is needed on this team

